

Vishay Semiconductors

Small Signal Schottky Diode



DESIGN SUPPORT TOOLS

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MECHANICAL DATA

Case: SOD-123

Weight: approx. 10.3 mg
Packaging codes/options:

18/10K per 13" reel (8 mm tape), 10K/box 08/3K per 7" reel (8 mm tape), 15K/box

FEATURES

 These diodes feature very low turn-on voltage and fast switching. These devices are protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges





- For general purpose applications
- AEC-Q101 qualified available
- Base P/N-E3 RoHS-compliant, commercial grade
- Base P/N-HE3 RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

PARTS TABLE					
PART	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS	
BAT42W	BAT42W-E3-08 or BAT42W-E3-18	Single	L2	Tape and reel	
	BAT42W-HE3-08 or BAT42W-HE3-18	Sirigle	L2		
BAT43W	BAT43W-E3-08 or BAT43W-E3-18	Cinglo	1.2		
	BAT43W-HE3-08 or BAT43W-HE3-18	Single	L3		

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Repetitive peak reverse voltage		V _{RRM}	30	V	
Forward continuous current (1)		I _F	200	mA	
Repetitive peak forward current (1)	$t_p < 1 \text{ s, } \delta < 0.5$	I _{FRM}	500	mA	
Surge forward current (1)	t _p < 10 ms	I _{FSM}	4	А	
Power dissipation (1)	T _{amb} = 65 °C	P _{tot}	200	mW	

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperature

THERMAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Thermal resistance junction to ambient air (1)		R _{thJA}	300	K/W	
Junction temperature		T _j	125	°C	
Operating temperature range		T _{op}	-55 to +125	°C	
Storage temperature range		T _{stg}	-55 to +150	°C	

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperature



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ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	$I_R = 100 \mu A \text{ (pulsed)}$		V _(BR)	30			V
Leakage current (1)	V _R = 25 V		I _R			0.5	μA
Leakage current (*)	$V_R = 25 \text{ V}, T_j = 100 ^{\circ}\text{C}$		I _R			100	μA
	I _F = 200 mA		V _F			1000	mV
	I _F = 10 mA	BAT42W	V _F			400	mV
Forward voltage (1)	I _F = 50 mA	BAT42W	V _F			650	mV
	I _F = 2 mA	BAT43W	V _F	260		330	mV
	I _F = 15 mA	BAT43W	V _F			450	mV
Diode capacitance	V _R = 1 V, f = 1 MHz		C _D		7		pF
Reverse recovery time	I_F = 10 mA, I_R = 10 mA, I_R = 1 mA, I_L = 100 I_R		t _{rr}			5	ns

Note

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

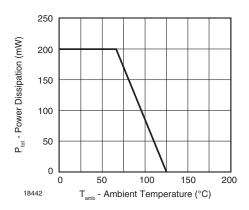


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

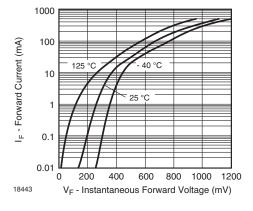


Fig. 2 - Typical Forward Characteristics

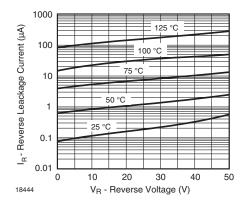


Fig. 3 - Typical Reverse Characteristics

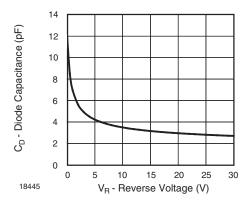


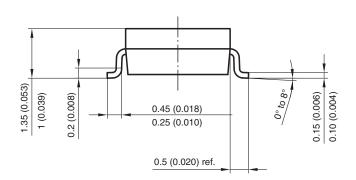
Fig. 4 - Typical Capacitance vs. Reverse Voltage

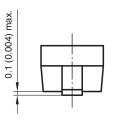
 $^{^{(1)}}$ Pulse test; $t_p \leq 300~\mu s,~t_p/T < 0.02$



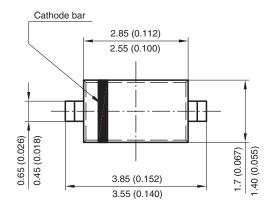
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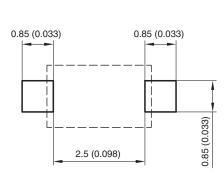
PACKAGE DIMENSIONS in millimeters (inches): SOD-123





Mounting Pad Layout





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